

FIG. 1

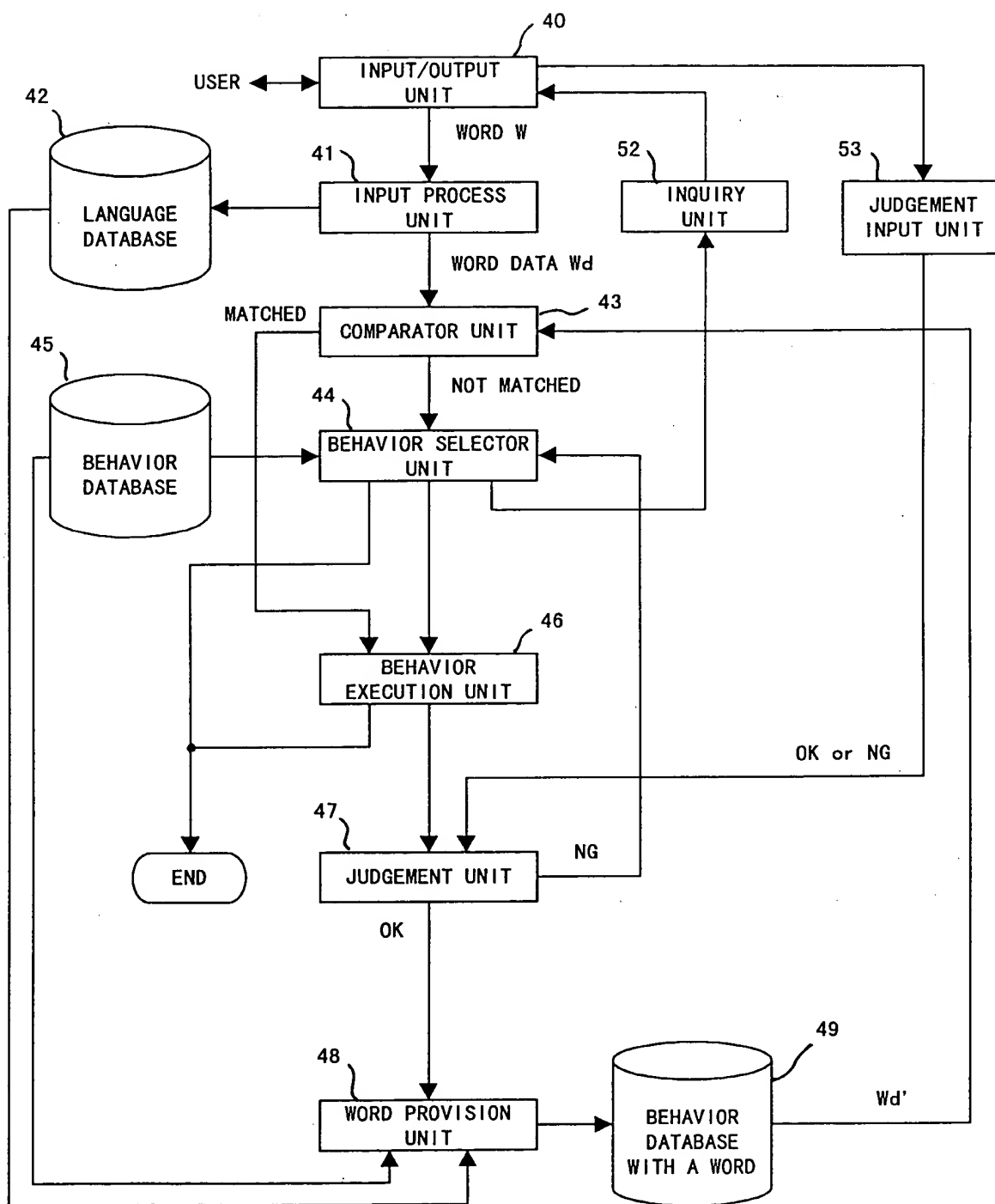


FIG. 2

FIG. 3

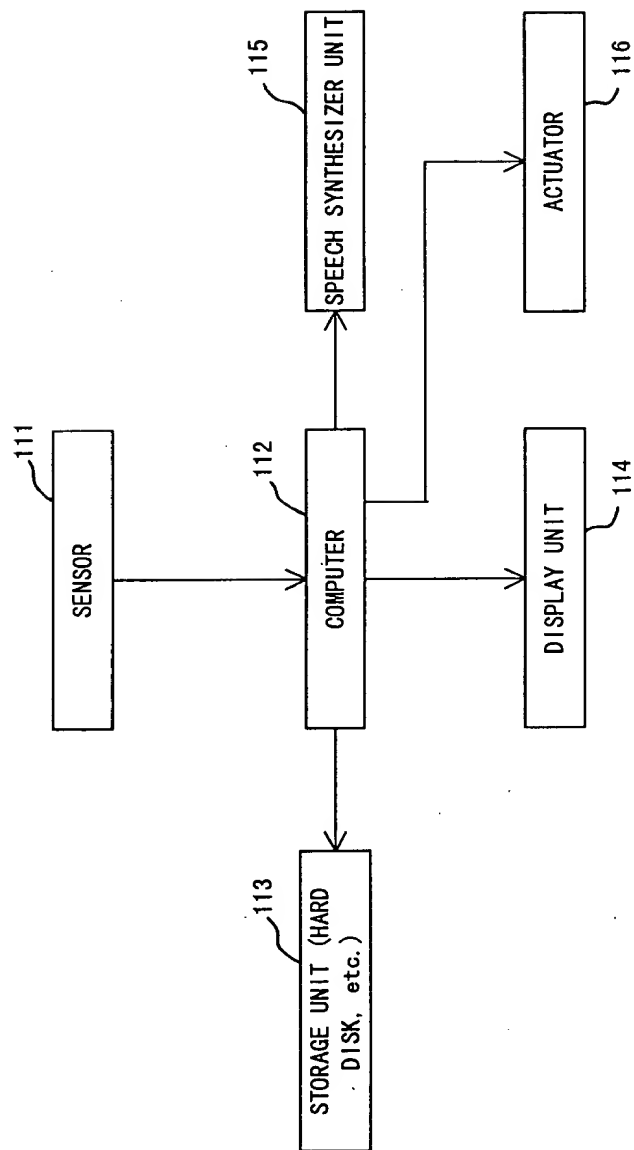


FIG. 4

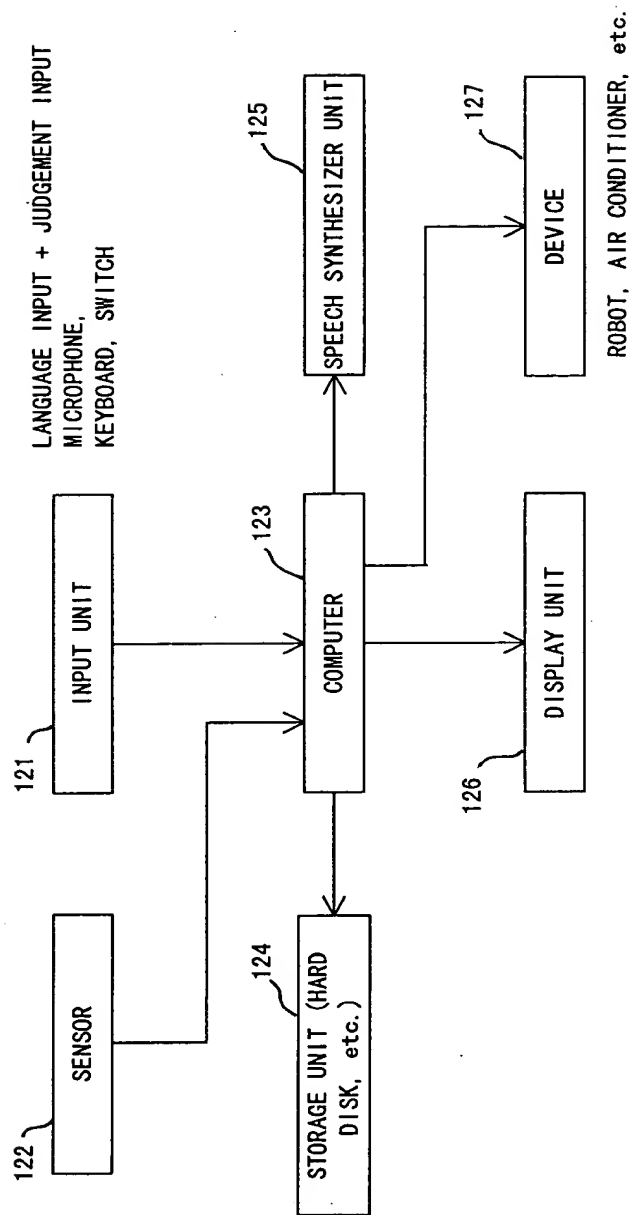
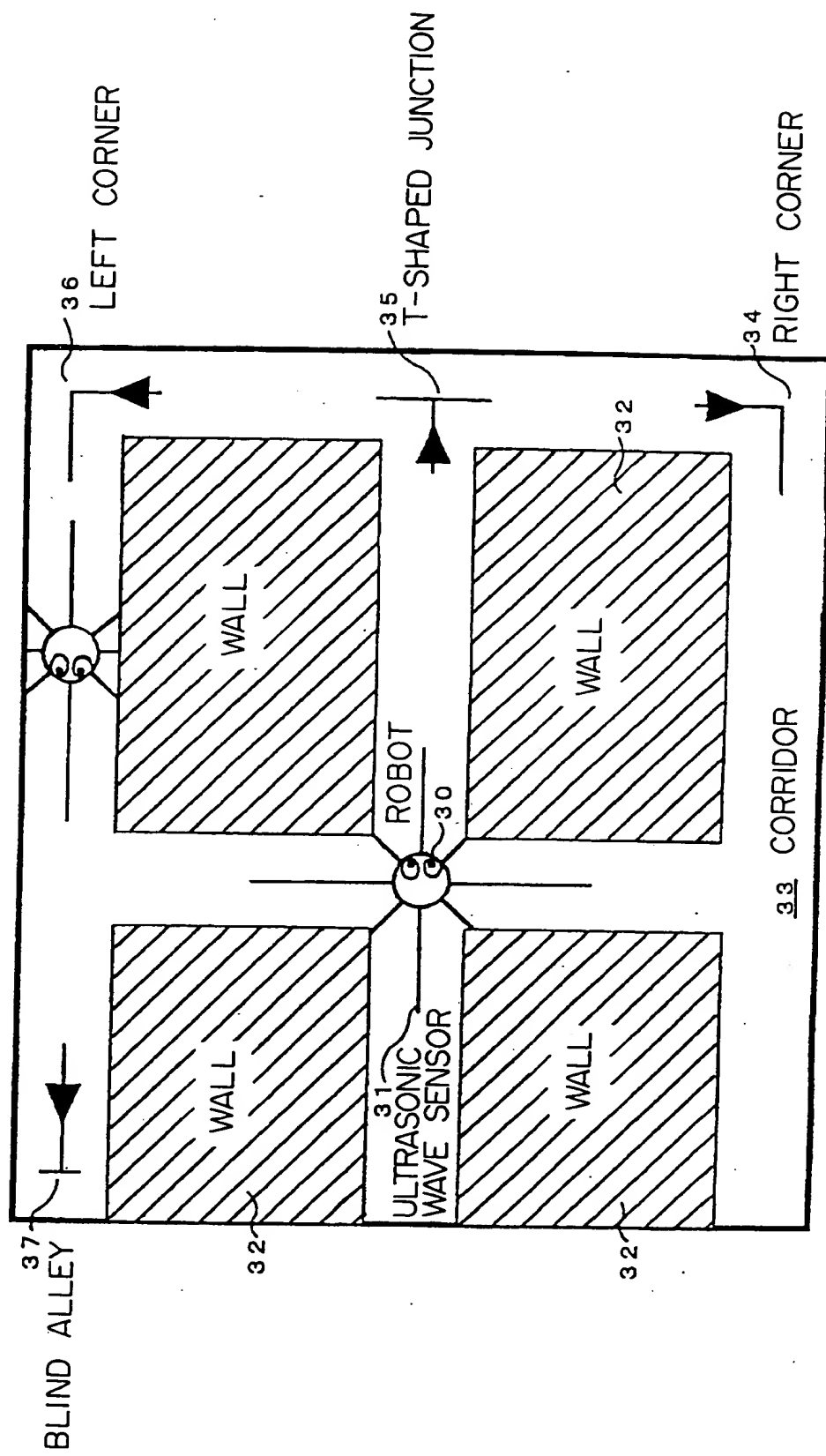


FIG. 5



666

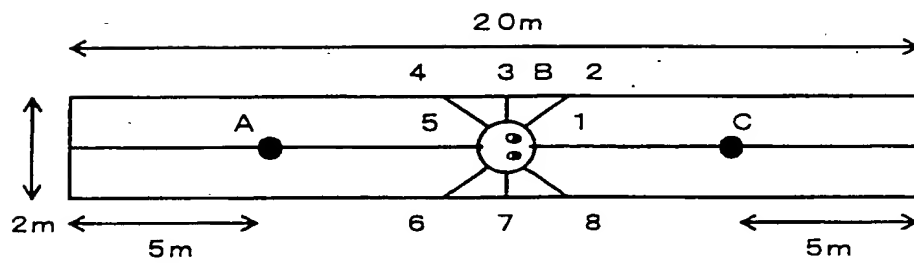


FIG. 7A

	1	2	3	4	5	6	7	8
A	10.0	1.0	0.6	1.0	4.6	1.0	0.6	1.0
B	9.6	1.0	0.6	1.0	9.6	1.0	0.6	1.0
C	4.6	1.0	0.6	1.0	10.0	1.0	0.6	1.0

FIG. 7B

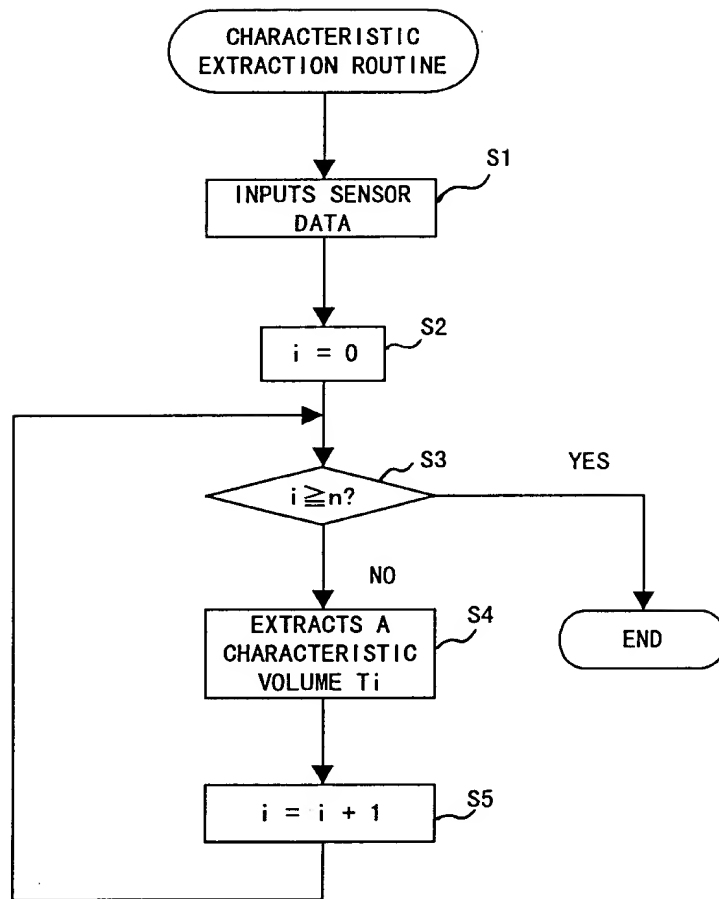


FIG. 8

01550 10498 05407 0558160

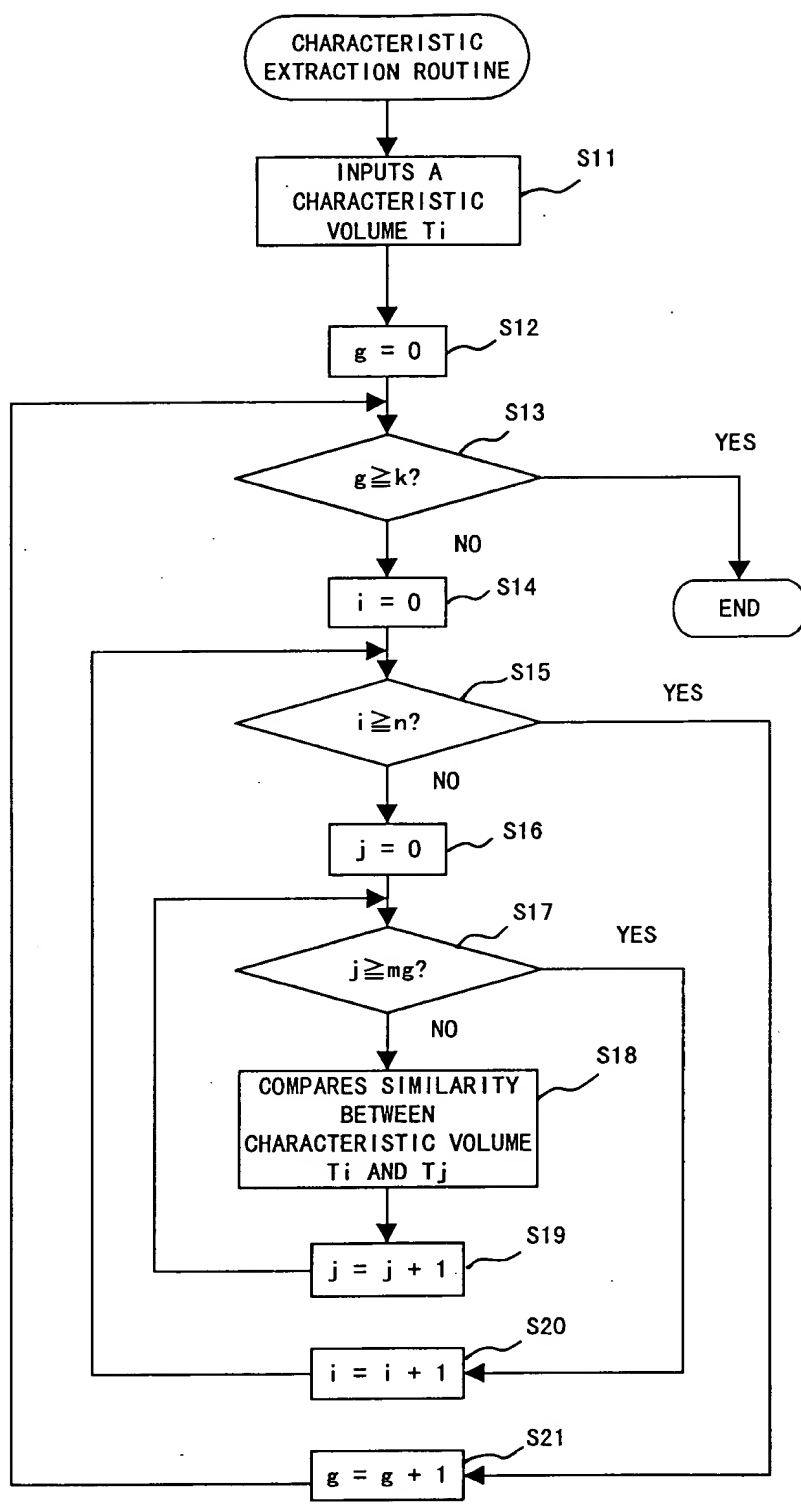


FIG. 9

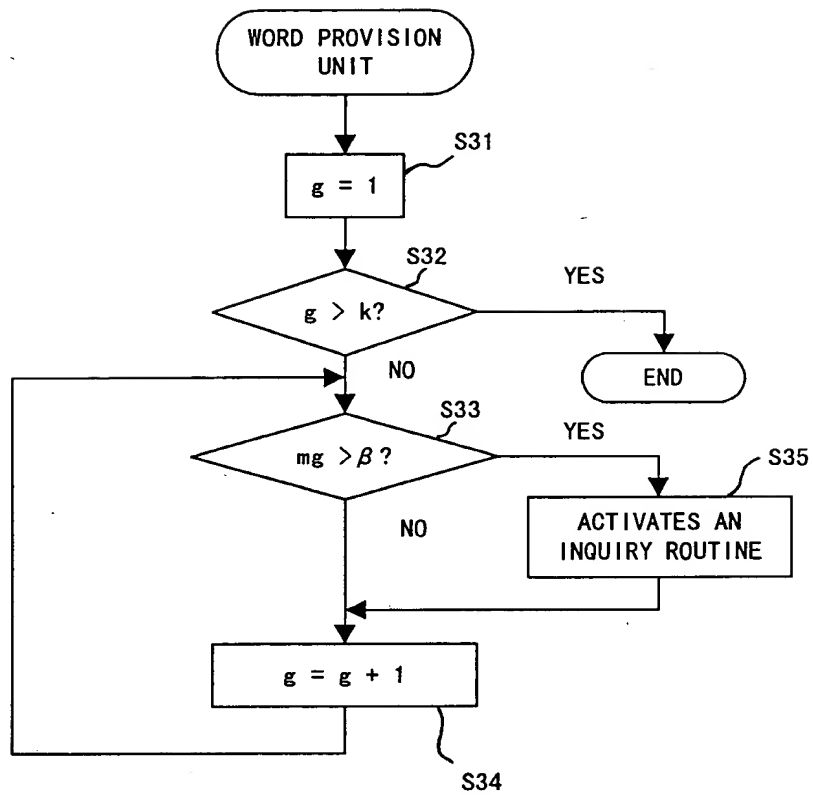


FIG. 10A

0918550 110498 06407 05553160

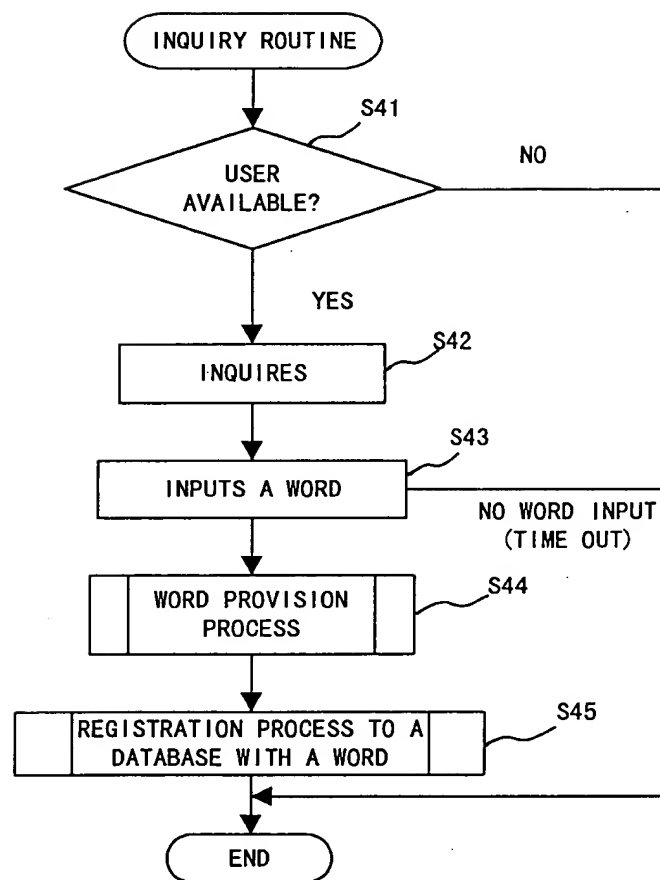


FIG. 10B

INQUIRY	DATA IN THE FOLLOWING LIST ARE OBTAINED. NAME THE DATA.	WORD INPUT :
CONTENTS OF DATA	NUMBER OF DATA : 10 CONTENTS OF CHARACTERISTIC : $\Delta \theta / \Delta t > 0$ DATA LIST : Data 1 : 10.0 Data 2 : 11.0 Data 3 : 12.0	CATEGORY : _____ WORD : _____
		RECOMMENDED :
		CATEGORY : <u>VERB</u> WORD : <u>TURN</u>

FIG. 11

0945550 06407 0653750

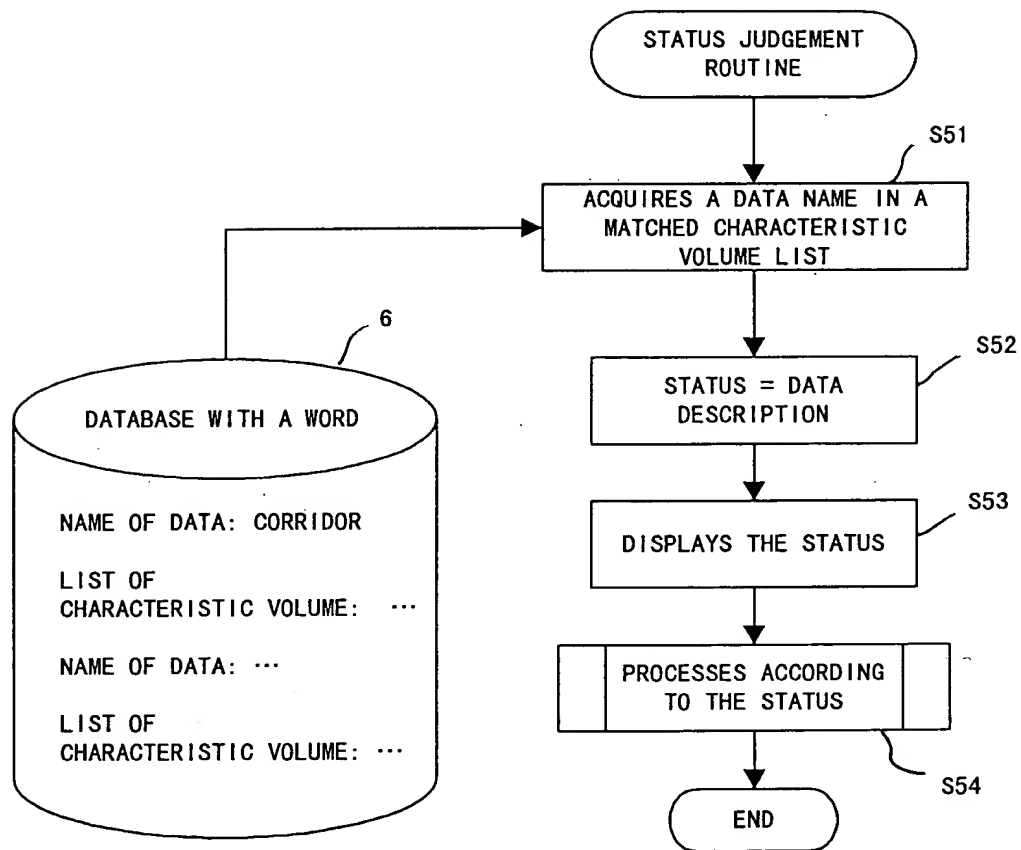


FIG. 12

AN EXAMPLE OF DATA OF A DATABASE FOR STORING RAW DATA:

ID: 0001	(IDENTIFICATION NUMBER OF DATA)
TIME: 1990.11.11 10:00:00	(ACQUIRED TIME OF DATA)
SENSOR ID: US	(KIND OF DATA)
DATA: 1.0 1.0 1.0	(CONTENTS OF DATA)
CHARACTER: Ufr/Url	(KIND OF CHARACTERISTIC VOLUME)
DATA: 16.0	(CHARACTERISTIC VOLUME)
.....	
ID: 0002	
.....	

IN THE CASE OF TIME SERIES DATA:

.....	(IDENTIFICATION NUMBER OF DATA)
ID: 000100	(ACQUIRED TIME OF DATA)
TIME: 1990.11.11 10:00:00	(KIND OF DATA)
SENSOR ID: Theta	(CONTENTS OF DATA)
DATA: 1.0.	(KIND OF CHARACTERISTIC VOLUME)
CHARACTER: Delta-Theta/Delta-Time	(CHARACTERISTIC VOLUME)
DATA: 0.3 (SID: 000099)	
.....	
ID: 000101	
.....	

FIG. 13

04550 10490 0553160

DATABASE WITH NO WORD

7

UGID: 0001	(IDENTIFICATION NUMBER OF GROUP)
NUMBER: 5	(NUMBER OF DATA BELONGING TO A GROUP)
NAME: UNKNOWN1	(PROVISIONAL WORD ATTACHED TO A GROUP)
CATEGORY: UNKNOWN	(PROVISIONAL CATEGORY OF A WORD)
CHARACTER: Ufr/Url	(KIND OF CHARACTERISTIC VOLUME BEING A CRITERION)
DATA: >10.0	(CRITERIA)
ID: 0001,0003,0006,.....	(IDENTIFICATION NUMBER OF DATA BELONG TO A GROUP)
UGID: 0002	
.	

FIG. 14A

DATABASE WITH A WORD

6

UGID: 0001	(IDENTIFICATION NUMBER OF GROUP)
NAME: CORRIDOR	(WORD ATTACHED TO A GROUP)
CATEGORY: NOUN	(CATEGORY OF A WORD)
NUMBER: 25	(NUMBER OF DATA BELONGING TO A GROUP)
CHARACTER: Ufr/Url	(KIND OF CHARACTERISTIC VOLUME BEING A CRITERION)
DATA: >10.0	(CRITERIA)
ID: 0001,0003,0006,.....	(IDENTIFICATION NUMBER OF DATA BELONG TO A GROUP)
UGID: 0002	
.	

FIG. 14B

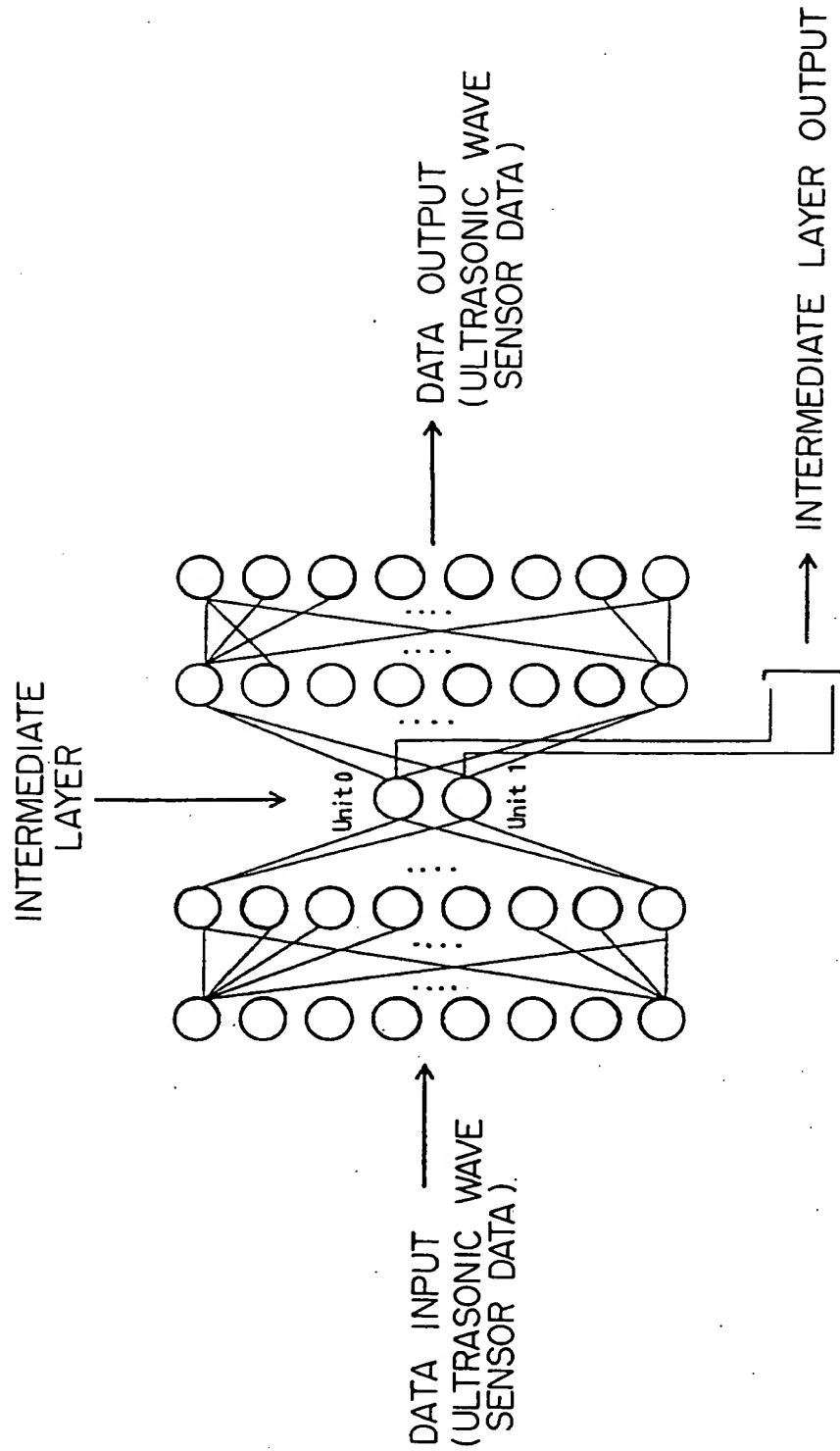
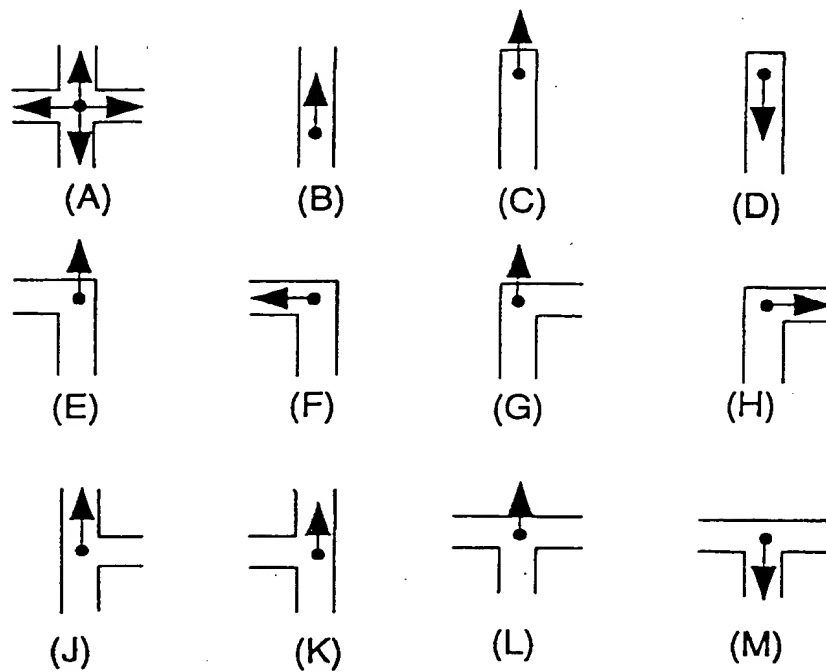


FIG. 15

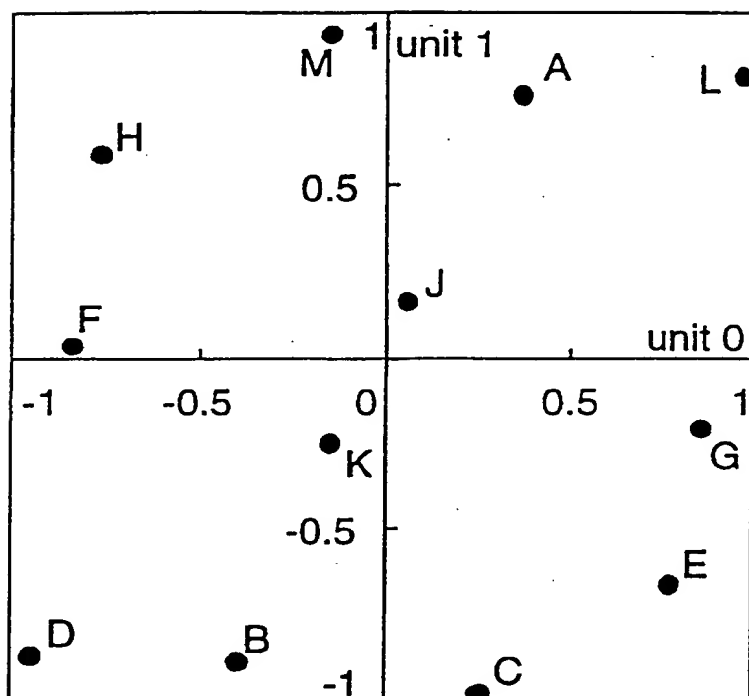


• : LOCATION OF ROBOT
 ↑ : DIRECTION OF ROBOT

FIG. 16

SENSOR NAME	1	2	3	4	5	6	7	8
(A)	9.60	1.01	9.60	1.01	9.60	1.01	9.60	1.01
(B)	9.60	1.01	0.60	1.01	9.60	1.01	0.60	1.01
(C)	0.60	1.01	0.60	1.01	9.60	1.01	0.60	1.01
(D)	9.60	1.01	0.60	1.01	0.60	1.01	0.60	1.01
(E)	0.60	1.01	9.60	1.01	9.60	1.01	0.60	1.01
(F)	9.60	1.01	9.60	1.01	0.60	1.01	0.60	1.01
(G)	0.60	1.01	0.60	1.01	9.60	1.01	9.60	1.01
(H)	9.60	1.01	0.60	1.01	0.60	1.01	9.60	1.01
(J)	9.60	1.01	0.60	1.01	9.60	1.01	9.60	1.01
(K)	9.60	1.01	9.60	1.01	9.60	1.01	0.60	1.01
(L)	0.60	1.01	9.60	1.01	9.60	1.01	9.60	1.01
(M)	9.60	1.01	9.60	1.01	0.60	1.01	9.60	1.01

FIG. 17

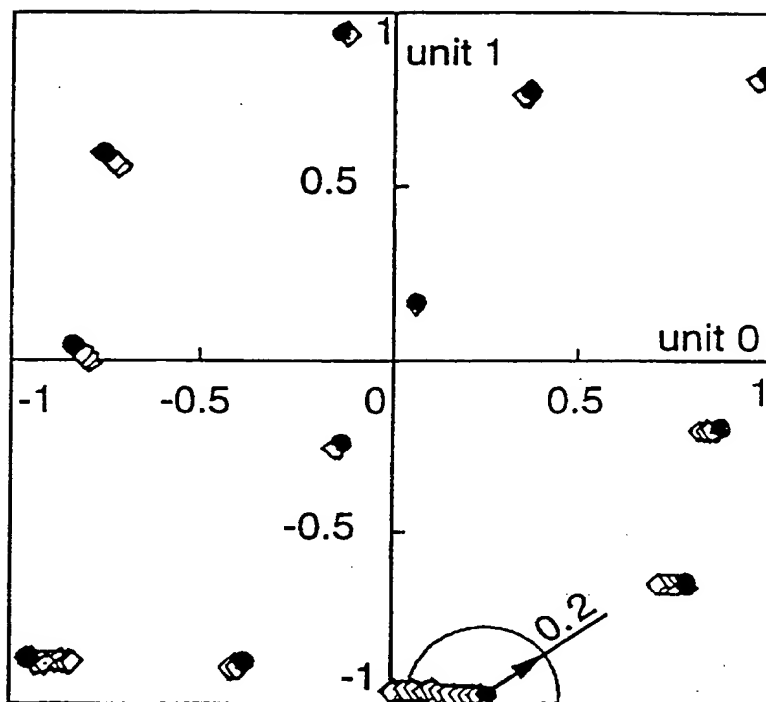


LEARNING RESULT OF CHARACTERISTIC

FIG. 18

PROVISIONAL WORD	Unit 0	Unit 1	ERROR	DESCRIPTION
(A)	0. 36	0. 77	0. 20	CROSSROADS
(B)	-0. 39	-0. 88	0. 20	CORRIDOR
(C)	0. 26	-0. 98	0. 20	TO A BLIND ALLEY
(D)	-0. 95	-0. 87	0. 20	FROM A BLIND ALLEY
(E)	0. 77	-0. 65	0. 20	TO A LEFT CORNER
(F)	-0. 83	0. 04	0. 20	FROM A LEFT CORNER
(G)	0. 86	-0. 20	0. 20	TO A RIGHT CORNER
(H)	-0. 76	0. 60	0. 20	FROM A RIGHT CORNER
(J)	0. 07	0. 17	0. 20	RIGHT SPACE
(K)	-0. 13	-0. 24	0. 20	LEFT SPACE
(L)	0. 97	0. 81	0. 20	TO T-SHAPED JUNCTION
(M)	-0. 13	0. 95	0. 20	FROM T-SHAPED JUNCTION

FIG. 19



RESULT OF CLASSIFICATION

- CHARACTERISTIC
- ◇ RESULT OF CLASSIFICATION

FIG. 20

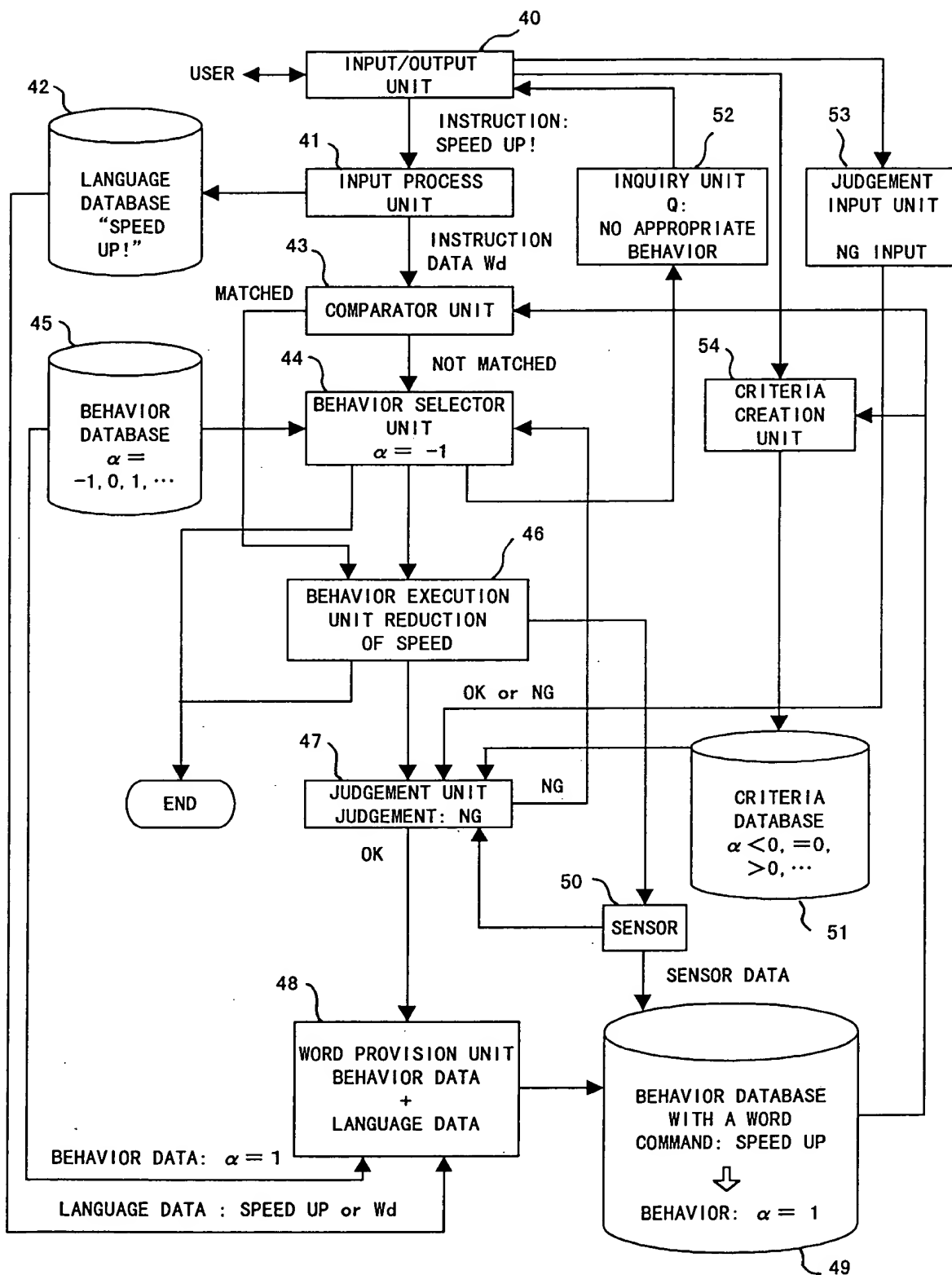


FIG. 21

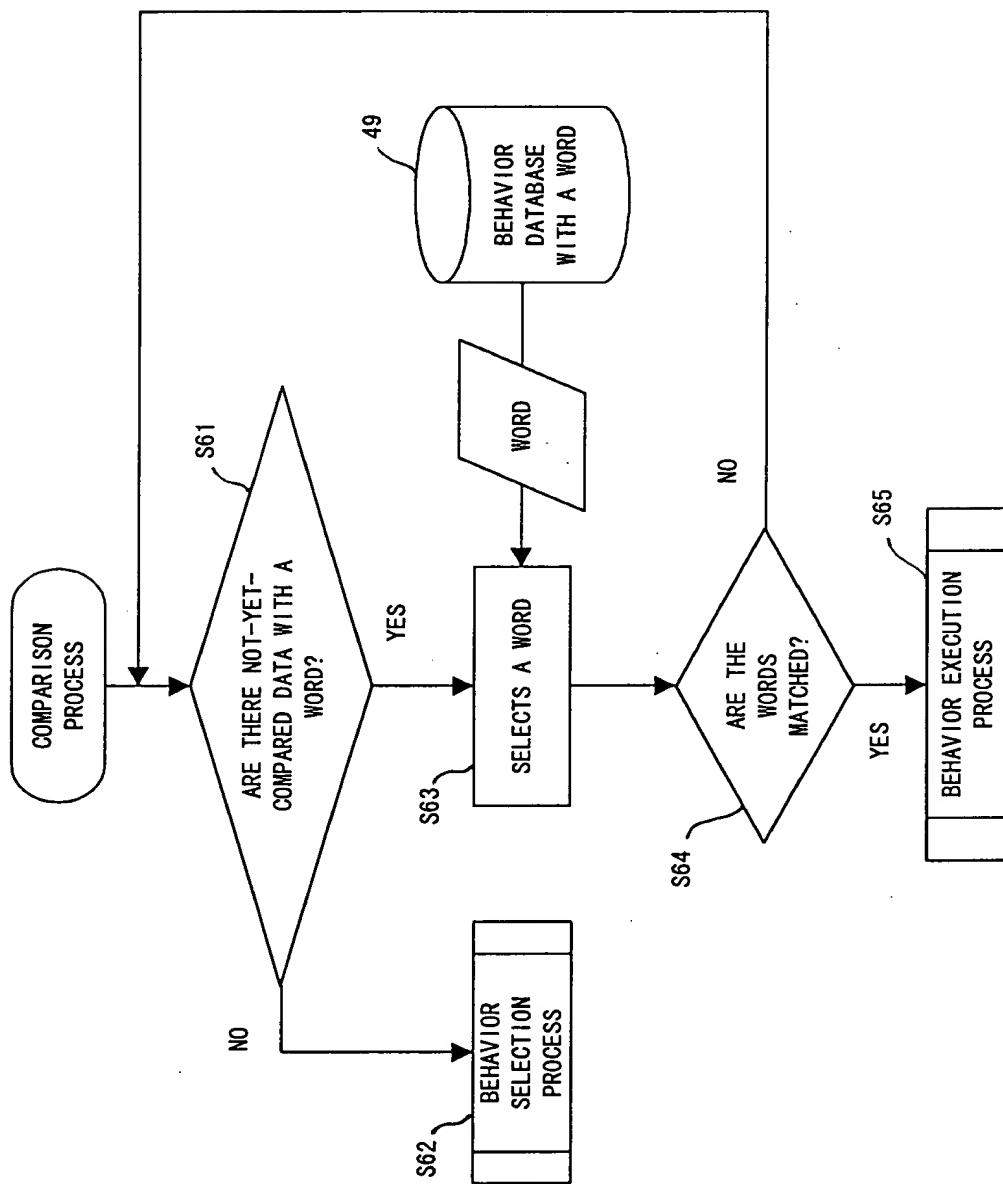


FIG. 22

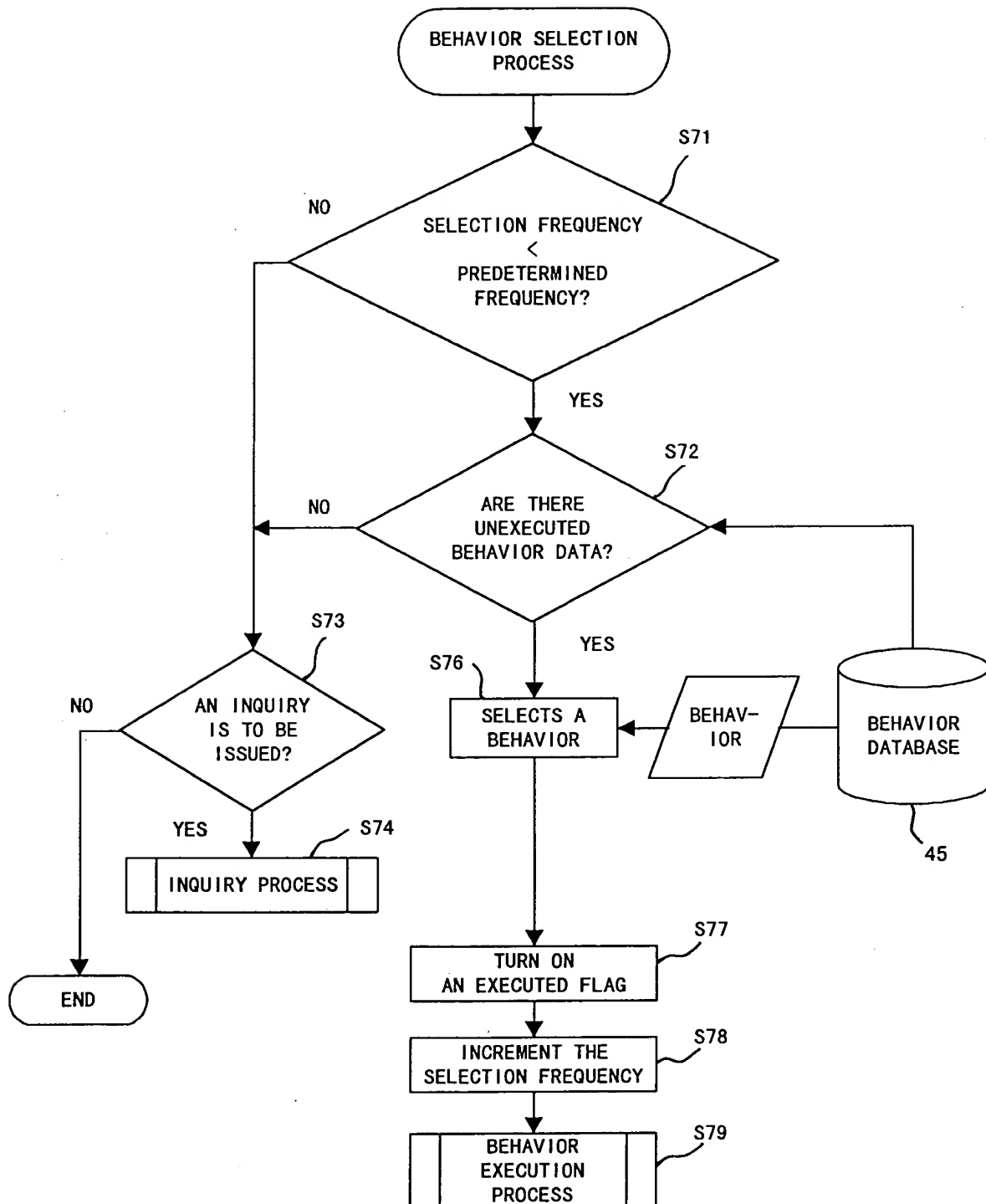


FIG. 23

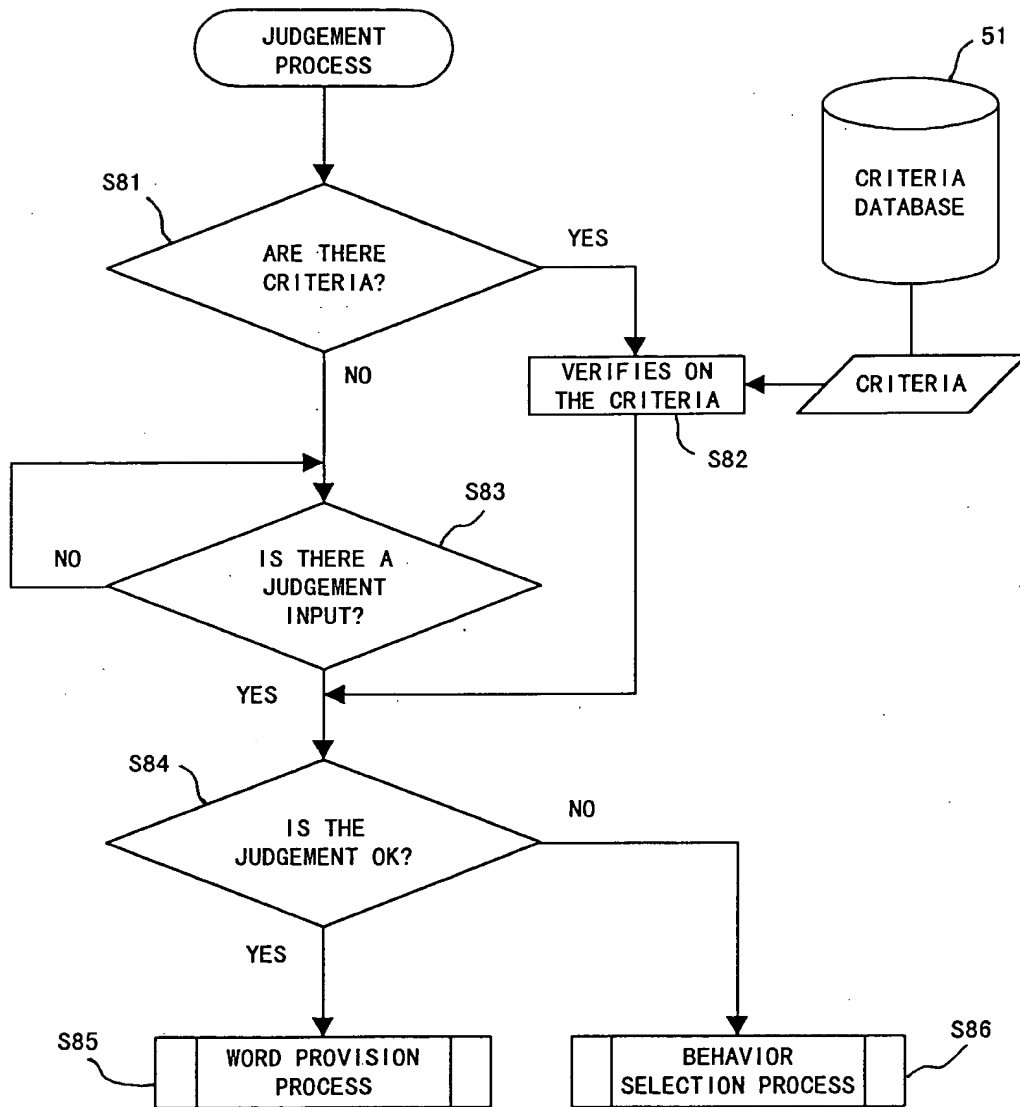


FIG. 24